

## REMARKS

### **NOVELTY UNDER PCT ARTICLE 33(2)**

In § V of the Written Opinion, it was asserted that **claims 1-20** lack novelty under PCT Article 33(2) as being anticipated by West et al. (U.S. Patent No. 6,530,944) (“West”). Applicants traverse this ground of rejection of claims 1-20 by argument and amendment.

In order for a reference to anticipate an invention, the reference must teach each and every element of the claimed invention.

Claim 1 describes a nanoparticle consisting essentially of a rare earth element doped in a metal oxide and claim 2 describes a silica glass nanoparticle consisting essentially of one or more metal oxides. West does not disclose a metal oxide. Further, West teaches away from a nanoparticle consisting essentially of a metal oxide because West describes gold (which is inert) as its most preferred nanoshell material. *See* col. 9, l. 1. In addition, functional properties of the inclusion of metal oxide in the nanoparticles of the claimed invention directly flow from this composition. For example, in one embodiment of the claimed invention the surface functionalization occurs using a silane possessing a leaving group capable of being displaced by an oxygen in the metal oxide. *See, e.g.*, Specification, para. 19. Accordingly, the cited reference does not anticipate the claims.

Claim 4 describes a composition comprising a magnetic nanoparticle core. West does not disclose the use of magnetic materials. In addition, functional properties directly flow from the inclusion of magnetic material in the nanoparticles of the claimed invention, which are also capable of light emission. For example, permitting optimized biochemical protocols for both analyte detection and analyte separation or purification. *See, e.g.*, Specification para. 10, Figure 11. Accordingly, the cited reference does not anticipate the claims.

Dependent claims 3 and 5-20 ultimately depend from claims 1, 2, and 4 and therefore include all elements of these claims. West does not teach all of the elements of the claims. Accordingly, the cited reference does not anticipate the claims.

Reconsideration of the pending claims is respectfully requested.

Attachment: Replacement Claims Page 21.

Respectfully submitted,

THE REGENTS OF THE  
UNIVERSITY OF CALIFORNIA et al.

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By: 

Jennifer R. Bush, Reg. No. 50,784  
Attorney for Applicant  
Fenwick & West LLP  
801 California Street  
Mountain View, CA 94041  
Tel.: (650) 335-7213  
Fax: (650) 938-5200

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